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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,573	02/27/2002	Khalil Amine	051583-0245	9196
23524	7590	02/25/2004	EXAMINER	
FOLEY & LARDNER 150 EAST GILMAN STREET P.O. BOX 1497 MADISON, WI 53701-1497			AUGHENBAUGH, WALTER	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,573

Applicant(s)

AMINE ET AL.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 22-31 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 22-31 and 35-37 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in claims 1, 20 and 22 in the Amendment filed November 13, 2003 (Amdt. B) have been received and considered by Examiner.
2. New claims 35-37 presented in Amdt. B have been received and considered by Examiner.
3. The cancellation of claims 21 and 32-34 in Amdt. B has been acknowledged by Examiner.

WITHDRAWN REJECTIONS

4. The 35 U.S.C. 102 rejection of claims 20, 21 and 23-31 as anticipated by Chaloner-Gill made of record in paragraph 9 of Paper 7 has been withdrawn due to Applicant's amendments to claims 20 and 22 in Amdt. B.

REPEATED REJECTIONS

5. The 35 U.S.C. 102 rejection of claim 22 as anticipated by Chaloner-Gill made of record in paragraph 9 of Paper 7 has been repeated for the reasons previously made of record. As stated in paragraph 9 of Paper 7, Chaloner-Gill teaches the combination of oxygen scavengers with various oxygen absorbers such as activated clay (col. 8, line 13). The activated clay taught by Chaloner-Gill is a clay as claimed by Applicant and is necessarily hydrofluoric acid absorbent since Applicant claims clay as such.
6. The 35 U.S.C. 103 rejection of claims 1-5 and 7-17 over Chaloner-Gill in view of Kurfman that was repeated in paragraph 5 of Paper 7 has been repeated for the reasons previously made of record. In regard to the amendment made in claim 1 in Amdt. B, the first and

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second layers of metal foil of the laminate of Chaloner-Gill and Kurfman are separate and distinct as claimed.

7. The 35 U.S.C. 103 rejection of claim 6 over Chaloner-Gill in view of Kurfman and in further view of Sasaki et al. that was repeated in paragraph 6 of Paper 7 has been repeated for the reasons previously made of record and for the reason provided above that addresses the amendment made in claim 1 in Amdt. B.

8. The 35 U.S.C. 103 rejection of claims 18 and 19 over Chaloner-Gill in view of Kurfman and in further view of Shores that was repeated in paragraph 7 of Paper 7 has been repeated for the reasons previously made of record and for the reason provided above that addresses the amendment made in claim 1 in Amdt. B.

NEW OBJECTIONS

Claim Objections

9. Claim 35 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 35 fails to further limit the subject matter of claim 20 in the instances where the absorbent material selected from claim 20 is magnesium phosphate, activated charcoal or combinations of molecular sieves, magnesium phosphate and activated charcoal.

NEW REJECTIONS***Claim Rejections - 35 USC § 112***

10. Claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 35 fails to further limit the subject matter of claim 20 in the instances where the absorbent material selected from claim 20 is magnesium phosphate, activated charcoal or combinations of molecular sieves, magnesium phosphate and activated charcoal.

Claim Rejections - 35 USC § 103

11. Claims 20, 22-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Hatakeyama et al.

In regard to claims 20, 23 and 35, Chaloner-Gill teaches a laminate for protecting components of an electrochemical cell such as a lithium battery (col. 1, lines 49-53), and therefore teaches a laminate for use as a battery housing. Chaloner-Gill teaches that the laminate protects from attack and/or passivation from electrolytes and moist air (col. 1, lines 17-19), and therefore the sealant layer of Chaloner-Gill (interior layers, items 36 and 38, col. 2, lines 9-12 and col. 4, lines 50-53) is capable of acting as a barrier to an electrolyte and has an internal surface that is substantially inert to the electrolyte. Chaloner-Gill teaches that the laminate comprises outer protective layer (item 40), adhesive layer (item 50), metal foil layer (item 44) and sealant layer (item 36) (col. 4, line 63-col. 5, line 43 and Figure 5). Chaloner-Gill teaches the combination of oxygen scavengers with various oxygen absorbers (col. 7, line 62-col. 8, line 68) and water absorbing agents such as silica gel (col. 9, lines 1-33). Chaloner-Gill teaches that the oxygen absorbers and water absorbing agents, in particle form, are incorporated in one of the

sealant layer, adhesive layer or protective layer or are disposed of between layers of the laminate (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68); therefore Chaloner-Gill teaches an absorbent material pattern printed on the internal surface of the sealant layer. The structure taught by Chaloner-Gill, particles of absorbent material disposed of between layers of the laminate, is structurally equivalent to the structure recited by claims 20 and 22, i.e. "printed on the internal surface of the sealant layer", and a plurality of particles spread out along the plane of the junction of two layers forms a pattern of absorbent material.

Chaloner-Gill fails to explicitly teach that the moisture absorbent material of Chaloner-Gill is selected from the group consisting of molecular sieves, magnesium phosphate, activated charcoal, and combinations thereof.

Hatakeyama et al., however, disclose a multilayered film comprising an oxygen absorbing resin layer (item 4, Fig. 1, col. 7, lines 37-41). Hatakeyama et al. disclose that the oxygen absorbing resin layer contains an absorbent such as activated carbon or molecular sieve to remove water contained in the oxygen absorbing resin layer (col. 5, lines 4-18). Activated charcoal is an activated carbon as evidenced by US 5,304,305 to Lehrer. Therefore, one of ordinary skill in the art would have recognized to have used molecular sieves or activated charcoal as the moisture absorbent material of Chaloner-Gill since molecular sieves and activated carbon materials, such as activated charcoal, are notoriously well known moisture absorbent materials for use in a resin layer of a laminate as taught by Hatakeyama et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used molecular sieves or activated charcoal as the moisture absorbent material

of Chaloner-Gill since molecular sieves and activated carbon materials, such as activated charcoal, are notoriously well known moisture absorbent materials for use in a resin layer of a laminate as taught by Hatakeyama et al.

Note that the intended use phrase "for use as a battery housing" has not been given patentable weight, since it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987).

Note that it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. *In re Hutchison*, 69 USPQ 138.

In regard to claim 22, Chaloner-Gill teaches the laminate as discussed above. Chaloner-Gill fails to explicitly teach that the absorbent material of Chaloner-Gill is a hydrofluoric acid absorbent selected from the group consisting of molecular sieves, activated charcoal, and combinations thereof. Hatakeyama et al., however, disclose a multilayered film comprising an oxygen absorbing resin layer (item 4, Fig. 1, col. 7, lines 37-41). Hatakeyama et al. disclose that the oxygen absorbing resin layer contains an absorbent such as activated carbon or molecular sieve to remove water contained in the oxygen absorbing resin layer (col. 5, lines 4-18). Activated charcoal is an activated carbon as evidenced by US 5,304,305 to Lehrer. Therefore, one of ordinary skill in the art would have recognized to have used molecular sieves or activated charcoal as the absorbent material of Chaloner-Gill since molecular sieves and activated carbon materials, such as activated charcoal, are notoriously well known absorbent materials for use in a resin layer of a laminate as taught by Hatakeyama et al. The molecular sieves and activated

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carbon materials, such as activated charcoal, taught by Hatakeyama et al. are necessarily hydrofluoric acid absorbent since Applicant claims molecular sieves and activated charcoal as such.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used molecular sieves or activated charcoal as the absorbent material of Chaloner-Gill since molecular sieves and activated carbon materials, such as activated charcoal, are notoriously well known absorbent materials for use in a resin layer of a laminate as taught by Hatakeyama et al.

In regard to claims 24 and 25, Chaloner-Gill teaches a barrier layer (polyamide-based layer, item 64) is disposed adjacent to the external surface of the sealant layer (interior layer, item 60) (col. 6, lines 15-22 and col. 6, line 46-col. 7, line 2 and Fig. 5). Chaloner-Gill teaches that the polyamide-based barrier layer contains an absorbent material (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

Note that "adjacent" does not require absolute contact, but requires relatively close position. *Ex parte Hadsel*, (PO BdApp) 109 USPQ 509.

In regard to claims 26 and 27, Chaloner-Gill teaches that an adhesive layer (olefin based adhesive polymer layer, item 62, Fig. 5) is between the sealant layer (item 60) and the polyamide-based barrier layer (item 64) (col. 6, lines 15-22). Chaloner-Gill teaches that the absorbent material is incorporated in the adhesive material of the adhesive layer (item 62) (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

In regard to claims 28-31, Chaloner-Gill teaches that a protective layer (polyamide based layer, item 72, Fig. 5) is disposed adjacent to the external surface of the barrier layer (polyamide-

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based layer, item 64) (col. 4, line 66-col. 5, line 3 and col. 6, lines 27-34). The protective layer of Chaloner-Gill contains an adhesive material since any material that comprises a layer that is bonded to another layer is an adhesive material; the polyamide based material of the protective layer (item 72) is therefore an adhesive material. Chaloner-Gill teaches that the laminate comprises an adhesive material (olefin based adhesive polymer layer, items 66 and 70) between the protective layer (item 72) and the barrier layer (item 64) (col. 6, lines 20-34). Chaloner-Gill teaches that the absorbent material is incorporated in the adhesive material of the adhesive layer (items 66 and 70) (col. 9, line 62-col. 10, line 15 and col. 10, lines 23-39 in claims 1 and 4-6; and col. 8, lines 49-68).

12. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaloner-Gill in view of Kurfman.

Chaloner-Gill teach a laminate for protecting components of an electrochemical cell such as a lithium battery (col. 1, lines 49-53). Chaloner-Gill teach that the laminate protects from attack and/or passivation from electrolytes and moist air (col. 1, lines 17-19), and therefore the sealant layer is capable of acting as a barrier to an electrolyte and is substantially inert to the electrolyte. Note that it has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. *In re Hutchison*, 69 USPQ 138. Chaloner-Gill teach that the laminate comprises outer protective layer (item 40), adhesive layer (item 50), metal foil layer (item 44) and sealant layer (item 36) (col. 4, line 63-col. 5, line 43 and Figure 5).

Chaloner-Gill fail to teach that the laminate comprises first and second metal layers, where the metal layers are attached to each other by an adhesive layer. Kurfman, however,

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discloses a metal/metal/polymer laminate having two metal layers intimately adhered to each other (col. 2, lines 25-28). Kurfman discloses that the laminate exhibits excellent barrier to moisture transmission (col. 1, lines 54-62). Kurfman teaches that the first metal layer and the second metal layer are bonded together via liquid portions of both the first and second metal layers and that the alloying occurs only between the liquid portions of the first and second metal layers (col. 11, line 67-col. 12, line 2); therefore, Kurfman teaches that the segregated alloy comprises two distinct layers, i.e. the first and second layers are bonded together via an alloy that is formed as a result of "interaction between liquid portions of the first and second metal layers" (col. 11, line 68-col. 12, line 1). The alloyed portion that bonds the first and second metal layers together corresponds to the adhesive layer as claimed by Applicant because the alloyed portion adhesively bonds the first and second metal layers together. Therefore, one of ordinary skill in the art would have recognized to have replaced the metal layer (item 44) of Chaloner-Gill with the two metal layers of Kurfman that are bonded via an alloyed portion between the two layers in order to improve the barrier to moisture transmission as taught by Kurfman.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the metal layer (item 44) of Chaloner-Gill with the two metal layers of Kurfman that are bonded via an alloyed portion between the two layers in order to improve the barrier to moisture transmission as taught by Kurfman.

In regard to claim 37, Chaloner-Gill teach that the metal foil layer is aluminum foil (col. 5, line 5).

ANSWERS TO APPLICANT'S ARGUMENTS

13. Applicant's arguments on pages 8-9 of Amdt. B regarding the 35 U.S.C. 102(b) rejection of claims 20 and 23-31 as anticipated by Chaloner-Gill are rendered moot due to the new 35 U.S.C. 103(a) rejection of claims 20, 22-31 and 35 over Chaloner-Gill in view of Hatakeyama et al. made of record in this Office Action.

14. Applicant's arguments on pages 8-9 of Amdt. B regarding the 35 U.S.C. 102(b) rejection of claim 22 as anticipated by Chaloner-Gill have been fully considered but are not persuasive. Applicant's argument on page 8 of Amdt. B that Chaloner-Gill does not teach clay is incorrect; see the repeated 35 U.S.C. 102(b) rejection of claim 22 as anticipated by Chaloner-Gill made of record in this Office Action.

15. Applicant's arguments on pages 9-12 of Amdt. B regarding the 35 U.S.C. 103(a) rejection of claims 1-5 and 7-17 over Chaloner-Gill in view of Kurfman have been fully considered but are not persuasive.

On page 10 of Amdt. B, Applicant provides a definition of the term "foil": "a foil is a 'very thin sheet metal'". Examiner maintains the position that the first and second layers of Kurfman are structurally equivalent to the structure that is recited by the term "foil"; the first and second layers of Kurfman are "sheets of metal" as Applicant points out that the first and second layers of metal foil are, and the first and second layers of Kurfman may be considered "very thin", although the phrase "very thin" is meaningless without a frame of reference as to what would be considered "thin" as opposed to "very thin" and so on. Applicant argues that "the claimed laminates provide superior leak protection over laminates having a barrier layer

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comprising a single metal sheet”, but the proposed combination of Chaloner-Gill and Kurfman as made of record results in a laminate having the structure claimed by Applicant.

On page 11 of Amdt. B, Applicant states that the laminate of Kurfman has “two metal layers intimately adhered to each other” and argues that this structure taught by Kurfman “is very different from the separate and distinct metal foils required by the claimed invention”, but “two metal layers” that are “intimately adhered to each other” are “separate and distinct” from each other by virtue of the fact that they are “*two* metal layers intimately adhered to each other”. Also refer back to the ANSWERS TO APPLICANT’S ARGUMENTS section of Paper 7; the two metal layers of Kurfman are separate and distinct from each other furthermore because they are joined together by the alloyed portion taught by Kurfman. The alloyed portion “separate[s]” the two layers making them “distinct” from each other.

In the second half of page 11 of Amdt. B, Applicant states that “the segregated alloy of Kurfman is in fact a single sheet”, but the ‘two metal layers bonded by an alloyed portion’ structure of Kurfman is composed of different layers: the first metal layer, the alloyed portion layer and the second metal layer. Applicant cites col. 4, line 68-col. 5, line 2 of Kurfman, wherein it is stated that “most, if not all, of the metal in the two metal layers is in the melted state”, but this does not mean that “most, if not all” of the metals of the two metal layers are alloyed to form the alloyed portion that joins the two layers together; as was stated in paragraph 10 of Paper 7:

Kurfman teaches that the first metal layer and the second metal layer are bonded together via liquid PORTIONS of both the first and second metal layers and that the alloying occurs (only) between the liquid PORTIONS of the first and second metal layers (col. 11, line 67-col. 12, line 2).

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Applicant argues that “the use of adhesive between the deposition of metal layers would defeat the very purpose of Kurfman’s invention”, but as stated in the 35 U.S.C. 103(a) rejection of claims 36 and 37 over Chaloner-Gill in view of Kurfman made of record in this Office Action, the alloyed portion that bonds the first and second metal layers together corresponds to the adhesive layer as claimed by Applicant because the alloyed portion adhesively bonds the first and second metal layers together.

In the sentence bridging pages 11 and 12 of Amdt. B, Applicant states that “the metallized film taught by Kurfman is a single metal sheet”, but the allegation that the “metallized film” is a “a single metal sheet” is not at issue as the claim language stands; what is at issue is that the “metallized film” is composed of different layers: the first metal layer, the alloyed portion layer and the second metal layer. Since the “metallized film” comprises two metal layers, the “metallized film” of Kurfman does “meet the requirement for a barrier layer comprising two separate and distinct layers of metal foil” contrary to Applicant’s argument that it does not. For the reasons provided above, despite Applicant’s argument to the contrary, a prima facie case of obviousness has been established for all the claims in the instant application.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,124,006 to Hekal and US 5,746,937 to McKedy et al.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh
02/05/04

WBA


HAROLD PYON
SUPERVISORY PATENT EXAMINER
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